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Docket No.: 200741US6 PCT

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

RE: Application Serial No.: 09/719,153
Applicants: Christian MARZOLIN et al.
RCE Filed: June 20, 2003
For: SUBSTRATE WITH A PHOTOCATALYTIC COATING
Group Art Unit: 1771
Examiner: BOYD, J. A.

SIR:

Attached hereto for filing are the following papers:

APPEAL BRIEF

Our credit card payment form in the amount of **$340.00** is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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DOCKET NO: 200741US6 PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
CHRISTIAN MARZOLIN ET AL.	: EXAMINER: BOYD, J. A.
SERIAL NO: 09/719,153	:
RCE FILED: JUNE 20, 2003	: GROUP ART UNIT: 1771
FOR: SUBSTRATE WITH A PHOTOCATALYTIC COATING	:

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

This is an Appeal Brief of the final rejection dated July 12, 2004, of Claims 1-11, 13-18, and 20-23. A Notice of Appeal from this final rejection was timely filed on October 12, 2004.

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is the Assignee SAINT-GOBAIN RECHERCHE.

II. RELATED APPEALS AND INTERFERENCES

Appellants' legal representative and Assignee are aware of no appeals which will directly effect or be directly effected by or have any bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1-11, 13-18, and 20-21 stand finally rejected. Claims 12, 19, and 22-23 have been cancelled without prejudice. A clean copy of the pending Claims 1-11, 13-18, and 20-21 is attached in the Claims Appendix.

IV. STATUS OF THE AMENDMENTS

No amendment has been filed after the Notice of Appeal. However, after the Final Office Action of July 12, 2004, an Amendment canceling Claims 22-23 and amending independent Claims 1 and 13 to place them in better form for appeal has been filed on September 3, 2004. That amendment has been entered for the purpose of the appeal as indicated in the Supplemental Advisory Action mailed on October 6, 2004.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Substrates that are coated with a photocatalytic coating material acquire new chemical properties. However, the photocatalytic coating material has a tendency to be non-smooth, non-flat, and has a short durability, as disclosed in the original specification at page 5, lines 10-17.

A portion of a substrate that includes a fibrous material, which is defined in the original specification at page 2, lines 27-36, is coated with a photocatalytic coating material. The photocatalytic coating material includes (i) a photocatalytic semi-conducting material and (ii) an adhesion promoter for promoting adhesion of the photocatalytic semi-conducting material to the fibrous material, as disclosed in the original specification at page 2, lines 3-10, and in Examples 1-3 on page 14, line 1, to page 16, line 19. The photocatalytic semi-conducting material includes titanium oxide which is at least partially crystallized in anatase

form as described in the original specification at page 5, line 29, to page 6, line 2, at page 14, lines 8-16, and at page 14, lines 27-36. The photocatalytic coating material coats fibers in the portion of the fibrous material over a thickness of between 30 and 50 nm.[1] The specific thickness of the photocatalytic coating material, between 30 and 50 nm, takes into account the "most commonly encountered mean size of the anatase TiO_2 crystallites" as described in the original specification at page 10, lines 16-21. Further, the original specification discloses (i) at page 14, lines 11-12, that "a mean size [of the TiO_2 crystallites is] of the order of 20 to 80 nm," (ii) at page 14, lines 35-36, "anatase crystallized TiO_2 particles with a mean diameter of 30 nm," and (iii) at page 15, lines 23-24, "TiO_2 particles [that] have a mean diameter of approximately 45 nm." Thus, the specification teaches that the thickness of the photocatalytic coating material between 30 and 50 nm is comparable to a mean size of crystallites of the at least partially crystallized titanium oxide.

Appellants' claimed invention advantageously provides a maximum effectiveness of the coating and an increased photocatalytic activity of the photocatalytic material by taking into account the most commonly encountered mean size of the anatase titanium oxide crystallite.[2]

Independent Claim 1 recites a substrate that includes "a fibrous material" and a "photocatalytic material coating at least a portion of the fibrous material." The photocatalytic material includes a photocatalytic semi-conducting material, and an adhesion promoter for promoting adhesion of the photocatalytic semi-conducting material to the fibrous material. Further, Claim 1 recites that the photocatalytic semi-conducting material includes "titanium oxide which is at least partially crystallized in anatase form" and the photocatalytic coating material "coats fibers in the portion of the fibrous material over a thickness of between 30

[1] See specification, page 10, lines 9-15.
[2] See specification, page 10, lines 16-21.

and 50 nm, which is comparable to a mean size of crystallites of the at least partially crystallized titanium oxide in anatase form."

Independent Claim 13 is directed to a process for manufacturing a substrate which (i) "deposits a liquid binder to bind fibers and form a fibrous material," as disclosed in the original specification at page 8, line 32, to page 9, line 7. Further, the process (ii) deposits a photocatalytic coating material in liquid phase over at least a portion of the fibrous material such that the photocatalytic coating material "coats fibers in the portion of the fibrous material over a thickness of between 30 and 50 nm, which is comparable to a mean size of crystallites of at least partially crystallized titanium oxide in anatase form." The photocatalytic material includes a photocatalytic semi-conducting material and an adhesion promoter for promoting adhesion of the photocatalytic semi-conducting material to the fibrous material. The photocatalytic semi-conducting material comprises titanium oxide at least partially crystallized in anatase form.

VI. GROUNDS OF REJECTIONS TO BE REVIEWED ON APPEAL

Appellants respectfully request the Board to review on this appeal (i) the rejection of Claims 1 and 10 under 35 U.S.C. § 103(a) as unpatentable over Tamio et al. (JP 08-252305, herein "Tamio") in view of Philippe et al. (U.S. Patent No. 6,326,079, herein "Philippe"); (ii) the rejection of Claims 1-9, 11-19, and 21 under 35 U.S.C. § 103(a) as unpatentable over Murasawa et al. (U.S. Patent No. 5,547,823, herein "Murasawa") in view of Philippe; and (iii) the rejection of Claim 20 under 35 U.S.C. § 103(a) as unpatentable over Murasawa in view of Philippe and in further view of the Oosawa abstract[3] (abstract of Japanese Patent Application JP 08-269391).

[3] No separate reliance on the full contents of JP 08-269391 has been indicated as to the citation and reliance on only this abstract.

VII. ARGUMENT

A. There is no motivation or suggestion to combine Tamio and Philippe relative to the rejection of Claims 1 and 10.

Independent Claim 1 subject matter has been discussed above.

Turning to the applied art, Tamio shows in Figure 1 a single glass fiber 11 coated with polytetrafluoroethylene (PTFE) fine particles 13 and separated photocatalyst fine particles 14 "held in the clearance between the PTFE fine particles 13."[4] Tamio teaches the desirability of the grain size of the photocatalyst particle to be less than 0.5 micron in paragraph [0007] on page 2. Accordingly, to whatever extent the titanium oxide particles to be used are of "an anatase type" as noted in paragraph [0006], they are not to have a standard mean size diameter.

Furthermore, Tamio does not teach or suggest that the photocatalytic coating material coats fibers over a thickness of between 30 and 50 nm, as recited in Claim 1. In actuality, the Tamio requirement that the PTFE particles are to hold the photocatalytic particles in the clearances between the PTFE particles that are to have a size about 0.2 μm[5] ($0.2\times10^{-6} = 200\times10^{-9}$) means that a layer thickness at least about 200 nm is contemplated because that will be the minimum size needed to accommodate at least one layer of PTFE particles.

The Final Office Action relies on Philippe for teaching coating a substrate with titanium oxide. Philippe teaches that the substrate is glass, ceramic or vitroceramic[6] and Philippe coats an entire surface of that solid substrate with titanium oxide. However, Philippe is silent about an adhesion promoter of the photocatalytic coating material. In fact,

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[4] Tamio, Abstract.
[5] Tamio, paragraph [0007].
[6] Philippe, column 1, lines 50-56.

Philippe does not need an adhesion promoter because Philippe uses a solid substrate, which holds the coating material better than a fibrous material. Thus, Philippe does not teach or suggest coating fibers of a fibrous material with a photocatalytic coating material that includes (i) a photocatalytic semi-conducting material, and (ii) an adhesion promoter.

Appellants respectfully submit that one of ordinary skill in the art would not combine the teachings of Tamio with the teachings of Philippe firstly because Tamio teaches interspacing individual (separate) photocatalytic fine particles in spaces between PTFE particles around a fiber while Philippe teaches a continuous coating of a solid material without any PTFE particles and inclusion of photocatalytic fine particles in spaces between such PTFE fine particles. These disparate reference teachings further raise a question of why the artisan would even consider these references for combination, a question the PTO must answer. See *In re Lee*, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002), requiring the PTO to "explain the reasons one of ordinary skill in the art would have been motivated to select the references ...."

In addition, there is no motivation or suggestion to coat the fiber of Tamio with a photocatalytic coating material having a thickness between 30 to 50 nm as noted above, because the Tamio teachings suggest a larger thickness of about 200 nm to accommodate the suggested size of the required PTFE particles. Moreover, Philippe specifically teaches, at column 13, lines 43-47, that "a TiO_2 coating with a thickness greater than the mean size of the monocrystals or 'crystallites'" produces a "better photocatalytic effect" (emphasis added). In essence, both references are teaching away from using a coating having a thickness comparable to the mean size of the TiO_2 crystallites. See *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988), noting that a teaching to avoid is a warning against using and that such teachings "diverge from and teach away from the invention at hand."

Furthermore, the top of page 6 of the final rejection states that the artisan would have been led to modify Tamio to have a coating thickness as taught by Philippe "motivated by the desire to create a substrate with a superior photocatalytic effect."

However, and as noted above, the "better photocatalytic effect" taught by Philippe is achieved with "a TiO_2 coating with a thickness greater than the mean size of the monocrystals or 'crystallites'" (emphasis added). In fact, the advantage of obtaining better photocatalytic effect is further noted (at column 13, lines 53-55) to reguire providing "a TiO_2 coating thickness at least two times greater than the mean diameter of the crystallites which it contains," further noting (at column 13, lines 52-53) that a 65 nm thick TiO_2 layer has the photocatalytic activity that "is markedly greater than that of Example 4 (15 nm of TiO_2 only)." Accordingly, missing from the discussion is the examiner's explanation of why the artisan seeking to provide the advantages of a "superior photocatalytic effect" would not have used the "superior" thickness of 65 nm for the TiO_2 layer.

The motivation offered in the final rejection also fails to address how the artisan is to do away with the about 200 nm coating of PTFE with photocatalytic interspaced particles that form the basis for the coating taught by Tamio and substitute the 65 nm TiO_2 layer taught by Philippe without these changes being a complete redesign of the layer and complete change of the desired long term use sought by Tamio. In this regard, Tamio notes that simple TiO_2 coatings, like that of Philippe, suffer from a lack of long term use and easy drop off of TiO_2 particles in paragraph [0003], and, thus, are inferior to the endurance provided by the use of the PTFE solution. Note *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) and the requirement therein that a proposed modification cannot render the invention being modified "inoperable for its intended purpose."

In effect, the outstanding final rejection does little more than attempt to show that parts of the inventive combination of Claim 1 were individually known in other arts and to suggest that such a showing is all that is necessary to establish a valid case of *prima face* obviousness. The PTO reviewing court recently reviewed such a rationale and dismissed it in *In re Rouffet*, 149 F. 3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) as follows:

> As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); see also *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996). To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. [emphasis added.]

There has been no such showing of those required reasons made in the final rejection.

Accordingly, it is respectfully submitted that independent Claim 1 and each of the claims depending therefrom patentably distinguish over Tamio and Philippe, either alone or in any proper combination.

Because the combination of Tamio and Philippe is improper, Appellants respectfully request the rejection of Claims 1 and 10 based on the combination of Tamio and Philippe be reversed.

B. There is no motivation or suggestion to combine Murasawa and Philippe relative to the rejection of base Claims 1 and 13 and Claims 2-9, 11, 12, 14-19, and 21 that depend on respective one of their base claims.

Independent Claim 13 has been amended in the Amendment filed on September 3, 2004, similar to independent Claim 1 and Claim 13 has been discussed above in the Summary of the Claimed Subject Matter section along with independent Claim 1.

Murasawa discloses a photocatalyst composite having a substrate with particles of a photocatalyst adhered to the substrate via "a less degradative adhesive."[7] Murasawa specifically discloses at column 4, lines 59-64, that the substrates to be used "in the present invention include inorganic articles such as ceramics and glasses, organic articles such as plastics, elastomers, woods and paper sheets, and metallic articles made of a metal such as aluminum or an alloy such as steel." The final rejection appears to rely on the suggestions of "wood" and "paper sheets" as to the Claim 1 substrate comprising fibrous material and the Claim 13 step of depositing a liquid binder to bind fibers to form a fibrous material.

Murasawa does not teach or suggest (i) TiO_2 partially crystallized in anatase form, and (2) a thickness of a photocatalytic coating material being between 30 and 50 nm, which is comparable to a mean size of crystallites TiO_2, much less any step of depositing a liquid binder as to Claim 13.

Appellants first note that the Final Office Action stated at page 6, third full paragraph, that Murasawa discloses in Claim 4 TiO_2 partially crystallized in anatase form. However, Claim 4 of Murasawa is just that, a claim that encompasses "titanium oxide regardless of crystal system" and not a positive teaching or suggestion to use TiO_2 in the claimed "partially crystallized in anatase form."

[7] Murasawa, Abstract.

In this last regard, Appellants respectfully submit that in *In re Benno*, 768 F.2d 1340, 1346, 226 USPQ 683, 686 (Fed. Cir. 1985), the court specifically stated "[t]he scope of a patent's claims determines what infringes the patent; it is no measure of what it discloses." Thus, it is respectfully submitted that the claims of an applied patent cannot be used as teaching or disclosing unspecified features simply because they are broad in scope. Moreover, even with its broad scope, Claim 4 of Murasawa does not specify the claimed thickness of the photocatalytic coating material, much less the noted step of Claim 13 as to depositing a liquid binder.

The Final Office Action relied on Philippe for teaching the features lacking in Murasawa. However, as discussed above regarding combining Tamio and Philippe, one of ordinary skill in the art would not find any motivation or suggestion in the record to substitute the TiO_2 coating of Philippe for the TiO_2 + less degradative adhesive of Murasawa, or to cover the individual fibers of the paper sheets of Murasawa with a coating material having a thickness between 30 and 50 nm when Philippe teaches a coating with a thickness greater "than the mean size of the monocrystals or 'crystallites,'" in order to achieve a "superior photocatalytic effect," all as fully discussed above.

Once again, the PTO ignores that the actual suggestion of Philippe is to use a TiO_2 layer of at least 65 nm (as discussed above) and that replacing the TiO_2 layer + less degradative adhesive layer of Murasawa would defeat the whole purpose of Murasawa. In the final analysis, the position taken by the examiner is little more than that the claimed combinations are obvious because individual parts thereof were known.

In addition, Claim 13 and the claims depending on 13, require the step of "depositing a liquid binder to bind fibers and form a fibrous material," as noted above. The rationale offered by the final rejection to excuse any evidence of such a step appearing in Murasawa is

the completely undocumented allegation at page 7 of the final rejection that "fibrous material such as wood or paper sheet would inherently contain a binder ...." Even if this is true, which has not been shown, how does it render the claimed subject matter obvious as the claimed subject matter requires the above noted step of "depositing a liquid binder ...." Omitting the claimed step because wood, for example, contains its own binders, hardly makes the claim requiring depositing a liquid binder obvious.

Furthermore, MPEP § 2112 (IV) requires the examiner to "provide a basis in fact and/or technical reasoning," not simply to assert an unsupported conclusion as to inherency. Accordingly, absent supporting evidence and/or a reasonable technical explanation, the unsupported assertion of inherency is entitled to no weight.

Accordingly, it is respectfully submitted independent Claims 1 and 13 and each of the claims depending therefrom patentably distinguish over Murasawa and Philippe, either alone or in any proper combination.

Because the combination of Murasawa and Philippe is improper, Appellants respectfully request the rejection of Claims 1-9, 11-17, 19, and 21 over Murasawa in view of Philippe be reversed.

C. The rejection of Claim 18 is also improper

In addition, dependent Claim 18 recites that the fibrous material includes one of a thermal insulation material, a sound insulation material, a liquid filter, a gas filter, a purifier, and a diffuser. The final rejection states at page 8, first line, that Murasawa discloses in the Abstract "an air purifying sheet." However, Appelants respectfully submit that neither Murasawa nor Philippe teach or suggest the air purifying sheet. Moreover, while Tamio

discloses an air purifying sheet, the final action did not rely on Tamio for rejecting Claim 18. Thus, Applicants respectfully submit that the rejection of Claim 18 is also improper.

D. There is no motivation to combine Murasawa and Philippe with Oosawa relative to the rejection of Claim 20.

Claim 20 depends from independent Claim 1, which has been discussed above. Because the combination of Murasawa and Philippe is improper, as discussed in the previous subsection, Appellants respectfully submit that the rejection of Claim 20 should be reversed for the same reason.

Moreover, Oosawa, is a short abstract that contains no hint of any relevance to the coatings of either Murasawa or Philippe. Once again, the rejection fails to supply adequate reasons to even look to the Oosawa abstract for any relevant teachings much less to select teachings therefrom to modify the disparate coatings of these references.

CONCLUSION

As the Examiner has failed to establish any reasonable motivation to combine the references and even if they could, for some unknown reason, be combined, the reference teachings would fail to suggest all the limitations of the rejected claims and thus, reversal of all outstanding rejections is respectfully requested.

Respectfully submitted,

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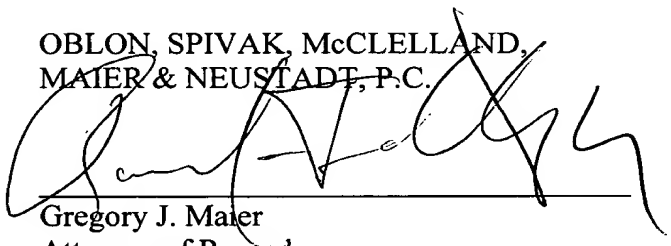

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VIII. CLAIMS APPENDIX

1. (Previously Presented) A substrate comprising:

a fibrous material; and

a photocatalytic coating material coating at least a portion of the fibrous material and including a photocatalytic semi-conducting material and an adhesion promoter for promoting adhesion of the photocatalytic semi-conducting material to the fibrous material,

wherein the photocatalytic semi-conducting material comprises titanium oxide which is at least partly crystallized in anatase form and the photocatalytic coating material coats fibers in the portion of the fibrous material over a thickness of between 30 and 50 nm, which is comparable to a mean size of crystallites of the at least partly crystallized titanium oxide in anatase form.

2. (Previously Presented) The substrate according to Claim 1, wherein

the titanium oxide is in a form of one of particles in colloidal suspension and a powder.

3. (Previously Presented) The substrate according to Claim 1, wherein the photocatalytic semi-conducting material comprises a titanium oxide from one of thermal decomposition of organometallic and at least one metal halide precursor in the photocatalytic coating material.

4. (Previously Presented) The substrate according to Claim 1, wherein the adhesion promoter comprises at least one of an organic material and an organic/inorganic hybrid material.

5. (Previously Presented) The substrate according to Claim 1, wherein the adhesion promoter comprises a silicon-comprising component selected from the group consisting of silane, silicone and siloxane.

6. (Previously Presented) The substrate according to Claim 1, wherein the adhesion promoter comprises at least one organic polymer selected from the group consisting of acrylic polymers and fluorinated polymers.

7. (Previously Presented) The substrate according to Claim 1, wherein the adhesion promoter comprises at least one oxide selected from the group consisting of TiO_2 and SiO_2 from one of thermal decomposition of silicon-comprising, organometallic or metal halide precursor(s) within the photocatalytic coating material.

8. (Previously Presented) The substrate according to Claim 1, wherein the adhesion promoter comprises at least one inorganic component selected from the group consisting of aluminium phosphates, potassium aluminosilicates and calcium aluminosilicates.

9. (Previously Presented) The substrate according to Claim 1, wherein the adhesion promoter forms part of a binder providing cohesion of the fibrous material.

10. (Previously Presented) The substrate according to Claim 1, wherein the fibrous material comprises at least one of insulation mineral wool and reinforcing glass strands.

11. (Previously Presented) The substrate according to Claim 1, wherein the fibrous material is one of web, felt, mould, paper and bulk material forms.

12. (Canceled)

13. (Previously Presented) A process for manufacturing a substrate, comprising:

depositing a liquid binder to bind fibers and form a fibrous material; and

depositing a photocatalytic coating material in liquid phase over at least a portion of the fibrous material such that the photocatalytic coating material coats fibers in the portion of the fibrous material over a thickness of between 30 and 50 nm, which is comparable to a mean size of crystallites of at least partly crystallized titanium oxide in anatase form, the photocatalytic material including a photocatalytic semi-conducting material and an adhesion promoter for promoting adhesion of the photocatalytic semi-conducting material to the fibrous material,

wherein the photocatalytic semi-conducting material comprises titanium oxide at least partially crystallized in anatase form.

14. (Previously Presented) The process according to Claim 13, wherein the depositing the photocatalytic coating material comprises depositing the photocatalytic coating material downstream of a fiberizing device before heat treatment/conditioning devices.

15. (Previously Presented) The process according to Claim 13, wherein the depositing the photocatalytic coating material comprises depositing the photocatalyic material while the fibrous material is being formed into mats.

16. (Previously Presented) The process according to Claim 13, wherein the depositing the photocatalytic coating material after converting the fibrous material into a finished product and before subjecting the finished product to a heat treatment.

17. (Previously Presented) The process according to Claim 13, wherein the depositing the photocatalytic coating material comprises one of spraying, coating and dip coating.

18. (Previously Presented) The substrate according to Claim 1, wherein the fibrous material comprises one of a thermal insulation material, a sound insulation material, a liquid filter, a gas filter, a purifier, and a diffuser.

Claim 19 (Canceled).

20. (Previously Presented) The substrate according to Claim 1, wherein the adhesive promoter further comprises at least one additive selected from the group consisting of an antioxidant, an ultraviolet absorber and a hindered amine light stabilizer.

21. (Previously Presented) The substrate according to Claim 1, wherein the adhesion promoter comprises at least one of an inorganic material and an organic/inorganic hybrid material.

Claims 22-23 (Cancelled).

IX. EVIDENCE APPENDIX

MPEP § 2112 (IV)

IV. <EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently.).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) (Applicant's invention was directed to a biaxially oriented, flexible dilation catheter balloon (a tube which expands upon inflation) used, for example, in clearing the blood vessels of heart patients). The examiner applied a U.S. patent to Schjeldahl which disclosed injection molding a tubular preform and then injecting air into the perform to expand it against a mold (blow molding). The reference did not directly state that the end product balloon was biaxially oriented. It did disclose that the balloon was "formed from a thin flexible inelastic, high tensile strength, biaxially oriented synthetic plastic material." *Id.* at 1462 (emphasis in original). The examiner argued that Schjeldahl's balloon was inherently biaxially oriented. The Board reversed on the basis that the examiner did not provide objective evidence or cogent technical reasoning to support the conclusion of inherency.).

In *In re Schreiber*, 128 F.3d 1473, 44 USPQ2d 1429 (Fed. Cir. 1997), the court affirmed a finding that a prior patent to a conical spout used primarily to dispense oil from an oil can inherently performed the functions recited in applicant's claim to a conical container top for dispensing popped popcorn. The examiner had asserted inherency based on the structural similarity between the patented spout and applicant's disclosed top, i.e., both structures had the same general shape. The court stated:

> [N]othing in Schreiber's [applicant's] claim suggests that Schreiber's container is of a 'different shape' than Harz's [patent]. In fact, [ ] an embodiment according to Harz (Fig. 5) and the embodiment depicted in Fig. 1 of Schreiber's application have the same general shape. For that reason, the examiner was justified in concluding that the opening of a conically shaped top as disclosed by Harz is inherently of a size sufficient to 'allow [ ] several kernels of popped popcorn to pass through at the same time' and that the taper of Harz's conically shaped top is inherently of such a shape 'as to by itself jam up the popped popcorn before the end of the cone and permit the dispensing of only a few kernels at a shake of a package when the top is mounted to the container.' The examiner therefore correctly found that Harz established a prima facie case of anticipation.

In re Schreiber, 128 F.3d at 1478, 44 USPQ2d at 1432.

X. RELATED PROCEEDINGS APPENDIX

NONE